

We claim:

1. A bar code scanner comprising:

a laser source for emitting a laser beam;

a rotating spinner for reflecting the laser beam, the rotating spinner being placed and configured such that when the laser beam is reflected from the spinner and to and out of a scan window, the rotation of the spinner will direct the laser beam such that the laser beam sweeps across the scan window to form a scan line;

a spinner position module for computing a rotational position of the spinner; and

a bar code detection and processing module for processing a scanner signal generated by light entering a scan window of the scanner, the bar code detection and processing module receiving rotational position information indicating the rotational position of the spinner and using the rotational position information to adjust parameters used in processing the scanner signal.

2. The scanner of claim 1, wherein the spinner position module determines the rotational position of the spinner by identifying a time when the spinner is in a reference position and using timing information to compute the displacement of the spinner from the reference position.

3. The scanner of claim 2, wherein the bar code detection and processing module uses spinner position information to adjust threshold levels used to process the scanner signal.

4. The scanner of claim 3, wherein the bar code detection and processing module sets threshold levels so as to inhibit processing of the scanner signal when the position of the spinner is such that the information provided by the scanner signal is unreliable.

5. The scanner of claim 4, further including a laser control module for receiving spinner position information and using the spinner position information to adjust parameters of the operation of the laser source.

6. The scanner of claim 5, wherein the reference position of the spinner is determined by a sensor.

7. The scanner of claim 5, wherein the reference position of the spinner is determined by the reading of a synchronization label.

8. A method of bar code detection and decoding, comprising the steps of:
directing a laser beam from a laser onto a rotating spinner and reflecting the laser beam from the spinner to a sequence of mirrors to create one or more scan patterns, each scan pattern comprising a set of scan lines emerging from a scan window:

continuously processing a scanner signal resulting from the entry of light into the scanner in order to detect and decode bar code information resulting from the reflection of light from a bar code within the field of view of the scanner;

identifying adjustments to be made and actions to be taken at predetermined positions of the rotational spinner;

continuously monitoring the rotational position of the spinner;
whenever the spinner reaches a predetermined position at which an adjustment is to be made or an action is to be taken, making the adjustment or taking the action associated with the predetermined position; and

whenever the scanner signal reflects the presence of a bar code in a scan field of the scanner, processing the signal to extract bar code information.

9. The method of claim 8, wherein the adjustments include setting a threshold used in processing the scanner signal, the threshold being set based on the rotational position of the spinner.

10. The method of claim 9, wherein the step of monitoring the rotational position of the spinner includes noting the time at which the spinner reaches a reference position and using timing information to identify the displacement of the spinner from the reference position.

11. The method of claim 10, wherein the actions to be taken include inhibiting processing of the scanner signal when the spinner position is such that barcode detection and decoding would be unreliable.

12. The method of claim 11, wherein the actions to be taken include setting a power level of the laser beam, the power level being set based on the spinner position.

13. The method of claim 12, wherein the actions to be taken include adjusting a focal point of the laser based on the spinner position.

14. The method of claim 10, wherein the spinner is detected to be in the reference position by a sensor.

15. The method of claim 10, wherein the spinner is detected to be in the reference position by the reading of a synchronization label.